



Air Quality Summary—August 2009



Baton Rouge Area

OZONE

There were three days that exceeded the National Ambient Air Quality Standard (NAAQS) for ozone in the Baton Rouge area during the month of August 2009. See the chart below for detailed information.

Ozone Action Days: August 13, 26 and 27—Code Orange/USG

PM_{2.5}

There were no exceedances of the NAAQS for PM_{2.5} in the Baton Rouge area during the month of August 2009. Please see the chart on the next page for detailed information on PM_{2.5} levels throughout the state in August.

Other Areas of the State

OZONE

There were two days that exceeded the standard for ozone in the Lake Charles area during the month of August 2009.

Ozone Action Days: August 26 and 27—Code Orange/USG for the Lake Charles area

PM_{2.5}

There were no exceedances of the NAAQS for PM_{2.5} for any area of the state during the month of August 2009. Please see the chart on the next page for detailed information on PM_{2.5} levels throughout the state in August.

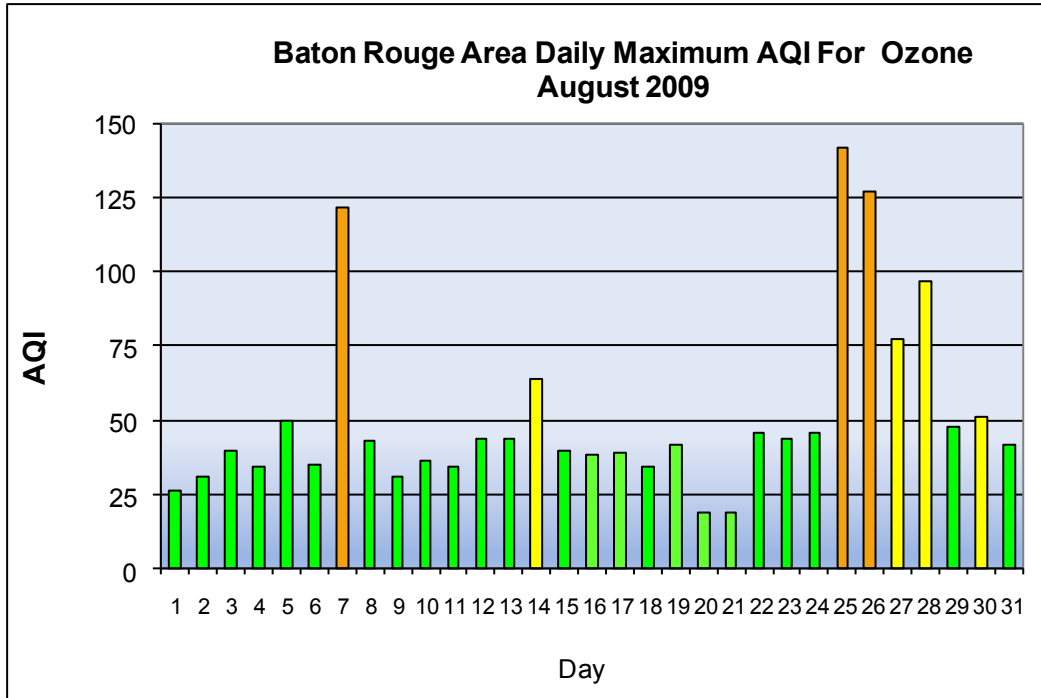
Statewide 8-HR Ozone Readings /AQI Above 75 ppb

DATE	AQI	8-HR OZONE Concentration (ppb)	MONITORING SITE
8/7/09	122	84	LSU
8/24/09	104	77	Vinton
8/25/09	142	92	LSU
	124	85	Carville
	116	82	Capitol
	104	77	Vinton

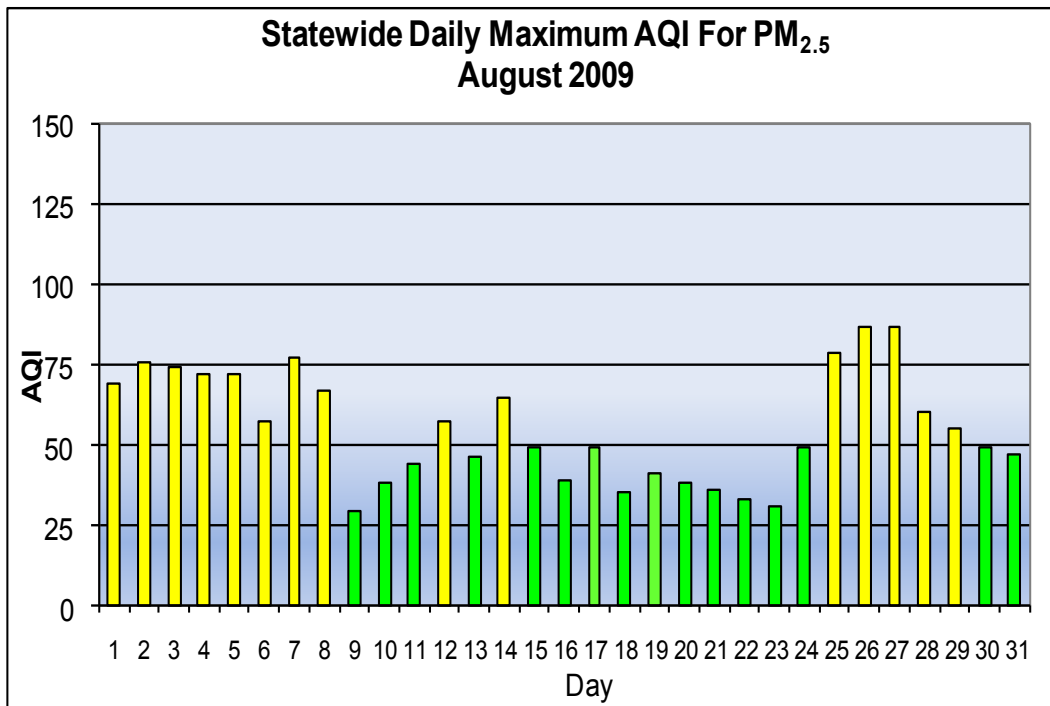
DATE	AQI	8-HR OZONE Concentration (ppb)	MONITORING SITE
8/26/09	127	86	LSU
	122	84	Baker
	114	81	Carville
	109	79	Convent
	106	78	Port Allen
	101	76	New Roads
	101	76	Capitol



0-50	Good
51-100	Moderate
101-150	Unhealthy for Sensitive Groups
151-200	Unhealthy
201-300	Very Unhealthy



Statewide High PM _{2.5} 24-Hour Average Readings - August 2009			
DAY	UG/m3	AQI	SITE
1	23	69	Port Allen
2	25.7	76	Westlake
3	25	74	Port Allen
4	24	72	Port Allen
5	24	72	Port Allen
6	18	57	Port Allen
7	26	77	Port Allen
8	22	67	Port Allen
9	8.9	29	Kenner
10	11.8	38	Westlake
11	13.5	44	Kenner
12	17.9	57	Westlake
13	14.3	46	Kenner
14	21	65	Port Allen
15	15.1	49	Shreveport Airport
16	12	39	Port Allen
17	15.1	49	French Settlement
18	10.7	35	Kenner
19	12.5	41	Kenner
20	11.8	38	Kenner
21	11.1	36	Kenner
22	10.3	33	Westlake
23	9.5	31	French Settlement
24	15	49	Port Allen
25	27	79	Port Allen
26	30	87	Port Allen
27	30	87	Port Allen
28	19	60	Port Allen
29	17.1	55	Kenner
30	15	49	Westlake
31	14.4	47	Shreveport Airport



Baton Rouge Climate Summary—August 2009

Prepared by: Jay Grymes
(based on available preliminary data as of September 30 2009)

August 2009's monthly temperature averaged 81.9°F for Baton Rouge's Metro Airport, nearly 2° cooler than July, but still running above the monthly norm by +0.5°F. Metro AP's three-month (JJA) average temperature of 83.0°F ranks as the sixth warmest for Baton Rouge since 1930 for the summer season. (It should be noted that both 2007 and 2008 averaged 0.1° warmer than 2009 for the same period, and are tied for the second warmest JJA period since 1930.) Averaged over the year through August, 2009 currently stands as the 4th warmest year of record since 1930 for metro Baton Rouge.

Daytime highs reached the 90°s on 21 dates, with the month's highest reading of 96°F recorded on August 7th and again on the 10th. Cooling degree-days (an index of cooling demand) totaled 532 degrees, near-normal for the month.

August was dominated by "fair to partly-cloudy" days across the metro area, although the region did see a number of raindays through the month. However, as is common in summer, many of these rain events were relatively short-lived, related to afternoon sea-breeze showers and summer season thunderstorms. Based on a review of NWS/HPC Daily Weather Maps, there were three notable frontal periods during August: a meandering cool front slowly worked through the state between Aug 12-14, a late month cool-front pushed through the state on Aug 21-23, and the month closed with a mainly-dry cool front passage (Aug 30 -31).

Table 1: Average "daylight hours" sky conditions (to 12,000 ft) during August 2009, based on automated ASOS observations from Baton Rouge's Metro Airport.

Sky Condition: Sunrise to Sunset (Sky Coverage)	Clear to Mostly Sunny (0/10ths – 3/10ths)	Partly Cloudy / Partly Sunny (4/10ths – 6/10ths)	Mostly Cloudy to Cloudy (7/10ths – 10/10ths)
No. Days	11	17	3

August daylight hours (official sunrise-to-sunset period, excluding 'Civil Twilight') declined from approximately 13.6 hours (Aug 1) to 12.8 hours (Aug 31) through the month.

Metro Airport recorded 6.54" of rain during August, which is slightly above the monthly norm for that location; for Metro AP, August is the first month since March with above-normal rainfall and only the second month of 2009 that has been wetter-than-normal. But August rain totals from other sites across the metro area suggest a different story for the month. Every other site included in Table 2 reported below-average rainfall for the month, with half of the 18 reporting sites (sites with incomplete records excluded) recording less than 3" of rain during August. Based on Table 2, rainfall for August averaged 3.09" for the greater Baton Rouge metro area (areally-unweighted), with 3.05" as the group median. In effect, the tendency towards "dry" weather that has dominated most of 2009 appears to have continued through August.

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Table 2: August 2009 rainfall for selected rainfall reporting stations across the greater Baton Rouge metro area. (Data are preliminary and provided courtesy of the National Weather Service, the LSU Southern Regional Climate Center, and the LSU AgCenter.)

Rainfall-Recording Site	Monthly Rainfall	Monthly DFN	No. Days $\geq 0.01"$	No. Days $\geq 1.00"$
BR - Metro AP	6.54"	+0.68"	12	2
<i>NWS Cooperative Network Sites</i>				
BR - Concord Estates	2.10"	-3.81"	10	0
BR - Sherwood Forest	3.76"	-3.03"	10	1
Brusly 2 W	1.76"	-4.13"	8	0
Central	M	M	M	M
Clinton - LDAF	M	M	M	M
Denham Springs	M	M	M	M
Gonzales	2.13"	-4.29"	11	0
Jackson 3 E	M	--	M	M
Livingston	3.78"	-2.09"	5	2
New Roads	0.86" (i)	-4.19"	4	0
Oaknolia	5.56"	-0.34"	8	1
Port Allen	M	M	M	M
Plaquemine 2 N	1.24"	-3.91"	5	0
St. Francisville	M	M	M	M
Zachary	M	M	M	M
<i>LSU AgCenter LAIS Automated Stations</i>				
LAIS - Ben Hur Farm	2.31"	--	10	0
LAIS - Burden Plantation	1.24"	--	10	0
LAIS - St. Gabriel Res Sta	3.55"	--	9	1
<i>CoCoRaHS Volunteer Observers</i>				
Old Jefferson 0.9 W (LA-EB-21)	4.69"	--	12	2
Shenandoah 0.8 W (LA-EB-36)	3.25"	--	11	1
Monticello 3.0 ENE (LA-EB-19)	1.12" (i)	--	7	0
Brownfields 5.8 NE (LA-EB-9)	3.19"	--	9	1
Baton Rouge 2.5 E (LA-EB-27)	2.90"	--	11	1
Baton Rouge 2.7 SW (LA-EB-2)	1.40"	--	13	0
Zachary 3.5 WNW (LA-EB-28)	2.43"	--	9	0
LSU Campus (LA-EB-33)	3.87"	--	12	0

DFN - Departure-from-Normal

M - Monthly Report Unavailable

"--" - Normals Not Available

(i) - Monthly Report May Be Incomplete

(e) - Estimated Value

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Rainday counts (Table 2, No. Days ≥ 0.01 ") for the area were highly variable for August, ranging from as few as 5 up to 13 days, with a median of 10 raindays (based on the 18 sites) -- slightly below the average of 12 raindays for August. About half of all sites reporting daily totals of 1" or more, with three sites (including Metro AP) reporting two days with rains of one-inch or more.

Metro Airport's ASOS platform reported thunder on 14 dates during August 2009, compared to a long-term average of 12.5 days according to the Baton Rouge **"Normals, Means and Extremes"** (NCDC). August records at Metro AP show 21 days with fog (primarily morning 'radiational' fogs), but no "heavy" fog (visibility less than 1/4-mile).

The ASOS reported an average wind speed of 3.7 mph for August 2009, well below the 4.8 mph monthly average (based on a 25-year record). Daily wind speeds averaged below 5.0 mph on all but three dates (Aug 1, 8 & 15), with the highest average daily wind speed for the month -- 8.1 mph -- recorded on August 1st. While daily winds generally averaged below-normal, there were peak winds and gusts in excess of 20 mph on more than half of all days, largely in response to thunderstorm-generated winds and outflows.

The weekly ***U.S. Drought Monitor*** as of September 1st (Fig. 3) shows a mid-state swath of parishes -- including metro Baton Rouge -- still rated as suffering "moderate drought" (D1), with roughly half of the state remaining "drier than normal" for this time of year. Although the metro area has remained under "dry to drought" conditions for most of the year, moisture deficits have not reached critical levels in the region. However, lawns, gardens, pastures and other natural and managed landscapes continue to deal with shallow- and medium-depth soil water deficits as we head into autumn. Late September through October tends to be among the driest periods of the year for Baton Rouge (short of an impact by tropical weather), so a rapid turn-around from the current "dry" trend appears unlikely.

The Extended Outlook:

The presence and expected slow-strengthening of El Niño (the ENSO¹ phase characterized by warmer-than-normal surface waters over much of the equatorial Pacific) point to increasing chances for a turn to "wetter" weather across south Louisiana, especially in the winter and early spring. Historically, rainfall for roughly 2-in-3 winter-springs (November thru April) was above-average when El Niño was in place.

Not surprisingly, the latest three-month outlooks by the NWS Climate Prediction Center indicate above-average chances for wetter-than-normal weather for south Louisiana into early 2010. It is noteworthy that NWS/CPC outlooks also include a tendency towards cooler-than-normal weather for south Louisiana over the coming months, potentially ending the persistent warmer-than-normal run that has dominated the Baton Rouge metro area in recent years.

ENSO¹ - El Niño / Southern Oscillation

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Figure 1: August 2009 *Daily Max/Min Temperatures and Precipitation* as recorded by the LSU AgCenter/LAIS Weather Station located at LSU-Ben Hur Farm (Nicholson Drive).

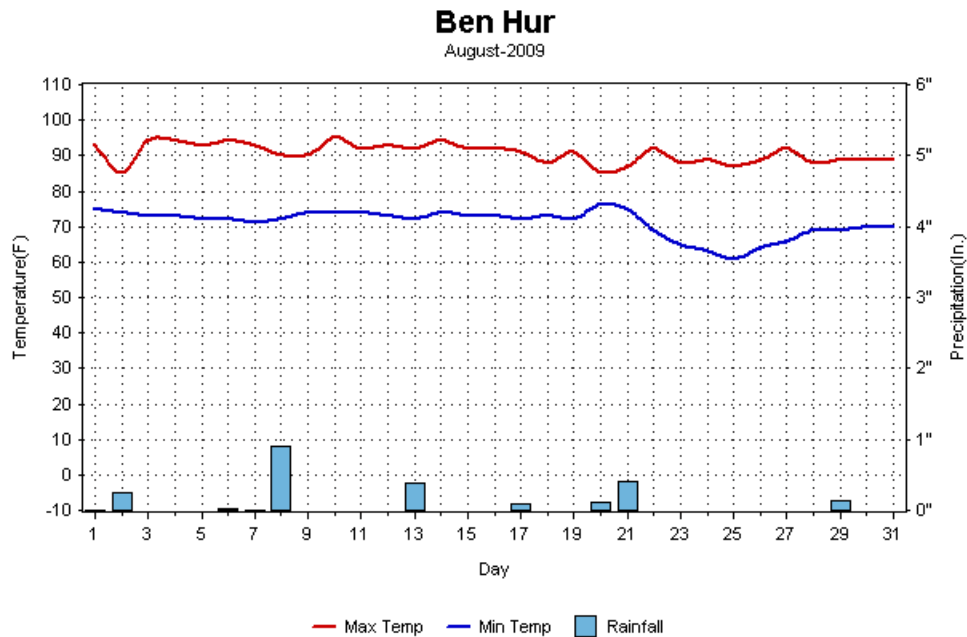
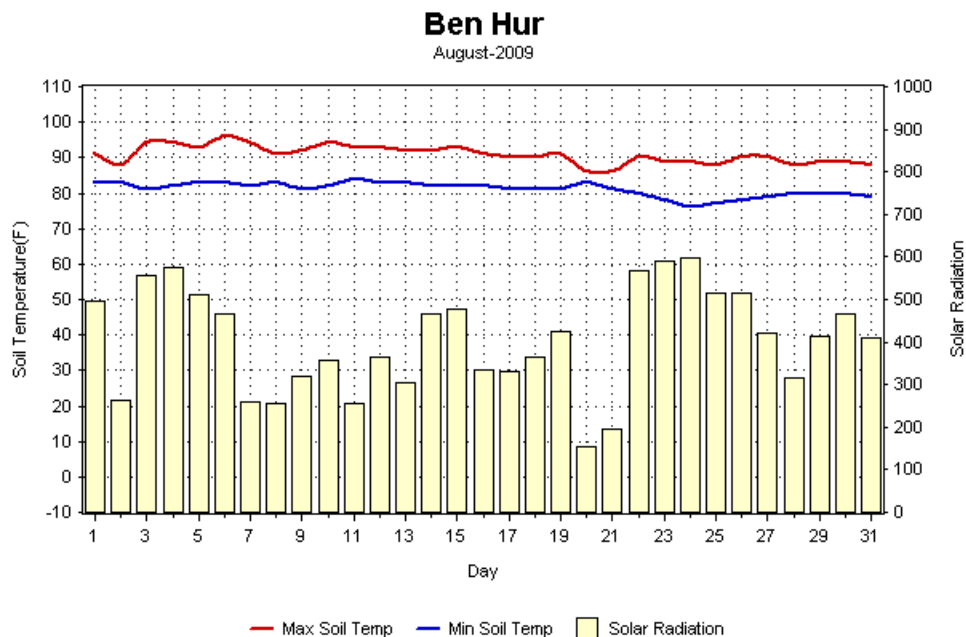


Figure 2: August 2009 *Daily Solar Radiation and Max/Min Soil Temperatures (4 in. depth)* as recorded by the LSU AgCenter/LAIS Weather Station located at LSU-Ben Hur Farm.

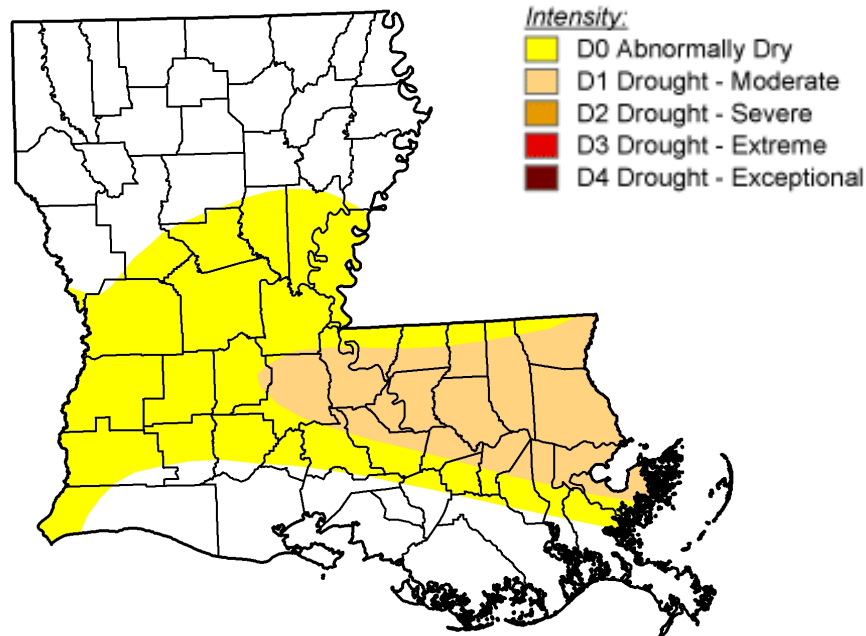


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Figure 3: Weekly **U.S. Drought Monitor** depiction for 1 September 2009.

Source: <http://drought.unl.edu/DM/>



Acknowledgements:

- National Weather Service offices serving Louisiana
- LSU Southern Regional Climate Center (SRCC)
- Louisiana Office of State Climatology (LOSC)
- LSU AgCenter / LAIS Weather Monitoring Program
- U.S. Drought Monitor (<http://drought.unl.edu/DM/>)
- NWS Climate Prediction Center (NWS/CPC)
- NWS Storm Prediction Center (NWS/SPC)
- NWS Hydrometeorological Prediction Center (NWS/HPC)
- NOAA/National Climatic Data Center (NCDC)
- WAFB-TV (Ch. 9), Baton Rouge

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*Jay Grymes, LSU AgCenter Climatologist and WAFB Chief Meteorologist, provides the climatology portion of this report as a free service to DEQ and the citizens of Louisiana.